

Will My Data Be Legacies? An Elderly Perspective on Digital Assets and Digital Legacies

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Abstract

The number of senior citizens who use mobile phones is increasing each year in Brazil. This trend means they are producers of digital assets (which may eventually become a legacy), due to constant data generation. This exploratory study follows a quantitative and qualitative approach and uses a survey as a data collection technique to address the research subject – investigating the perspective of senior citizens regarding digital legacy and assets. The authors conclude, given the importance of the results, that it is still necessary to pursue a larger study with the elderly for the development of initiatives that help improve knowledge and technology use as well as to increase their perception about their own digital assets.

Keywords: *Digital Assets, Digital Legacy, Senior Citizens*

1 Introduction

Every person who accesses digital platforms through the Internet (for example, social networks, computers, tablets, among others) unavoidably generates data (pictures taken with a mobile phone, voice messages, e-mails, etc.), which Maciel and Pereira (2012) call digital assets. Carroll and Romano (2010) also explain that every game and digital book purchased digitally, and even messages that are sent, become a person's assets. Considering them in legal terms, Edwards and Harbina (2013) write about how the regulation of assets in the digital environment is important for a person's privacy, since, for example, there have already been legal battles so that the email of someone who died could be accessed by the family.

In general terms, these assets will become a part of a person's digital legacy following his or her death and anyone can choose to grant or deny access to this information. In this sense, digital assets are the data we produce during our lifetime existing in a digital medium (documents, e-mails, photos stored on computers and on social networks), and digital legacy is the set of data, accounts and passwords that are stored digitally and make up the legacy of the person who created them in a digital medium.

Carroll and Romano (2010) prepare a presentation on digital assets and reflect upon the amount of things that are currently stored in the digital medium, characterized as assets, since they belong to someone. Although the amount of data is increasing every day, there is little reflection on the subject matter.

According to the Brazilian Institute of Statistics- IBGE (2018), senior citizens belong to the group that has increased the most among Internet users in 2017 and now reach the mark of 31.1%. Despite this rising number, many senior citizens lack crucial information about what happens or will happen with their digital data when they die or leave the Internet and social networks for any other reason. Called Baby

Boomers – post-World War II generation, or Silent Generation (McIntosh-Elkins et al., 2007), they were born when this type of technology, as it is known today, had not yet been “created” or had not reached the general population, as it was only employed for military purposes. Therefore, the generation object of this study is not as familiar with communications technology as subsequent generations.

In view of the unmistakable disparity between age groups in the use of technology, it is salutary that older individuals, who have little exposure to it, are advised about the importance of the data they produce and consume. Thus, knowing what this portion of the population understands by digital assets motivated the conduct of this research, whose objective was to investigate the perspective of senior citizens about issues related to digital assets and legacies.

The approach adopted in this research is quantitative and qualitative, which includes sending a questionnaire to two different groups of senior citizens. The results present the considerations made by generation regarding the topic addressed in the survey. This article is an extended and revised version of the work of Verhalen et al. (2020).

This article is divided into five other sections: theoretical framework, methodology, results, discussions, and final considerations.

2 Theoretical Framework

To support the research, the authors of this study examined articles that could help understand how the elderly have dealt with communications technology, especially in the perspective of digital assets.

Using the new “lifelong learning” paradigm, Cachioni et al. (2019) discuss the importance of digital literacy for all ages and especially the elderly. For the authors, this type of literacy “involves skills such as understanding, assimilating, re-elaborating and acquiring knowledge through actions such as reading, re-reading, and writing information, in or-

der to employ Information and Communication Technologies (ICT) as a valuable tool with personal and collective benefits". This is a group that has been increasingly expanding and represents real and potential consumers of digital content. In this sense, designers and developers must propose accessible computing solutions for different user profiles, including users in the 60+ age range.

Lindsay et al. (2012) reveal that many people look for technological solutions for senior citizens, but the latter are not consulted about whether these solutions are desired, or whether their functionalities are useful to them. The approach used in the referred study is called Open Architecture for Accessible Services Integration and Standardization (OASIS). Despite the use of the OASIS approach, the researchers concluded that the biggest problem in validating the approach was not the elderly themselves, rather the reluctance of designers to work with that user group.

Cunha et al. (2019) describe a survey conducted with the elderly since 2015, in which the authors were able to observe recurring difficulties this group had in interacting with mobile devices and their applications. In a study conducted with 12 senior citizens, participants interacted with a digital game and their performance data was collected and analyzed. The researchers made use of the data analysis and observations gathered over the years to synthesize model guidelines for designing mobile solutions aimed at the elderly. They came up with the following guidelines: Avoid placing important buttons at the bottom of the screen or using larger buttons in that space; Avoid interaction with objects containing 50dp or less in size; Avoid adding important or frequent features to menus that are presented by small buttons; Avoid important or frequent operations associated with drag and drop; among others. The most popular applications, such as social networks and communication applications, should be aware of these guidelines that will allow senior citizens, who are increasing in number and becoming digitally literate, to consume the services offered by the Internet.

A study including 142 senior citizens, carried out by Bell et al. (2013), discussed the importance of the current role of social networks for the elderly in terms of maintaining social contact with people, considering mobility limitation problems, chronic diseases and age-related issues. Choosing Facebook as the researched social network, the study demonstrated that absence from the social network, for most of the elderly users, was not due to the user's lack of will, but due to a lack of confidence in their abilities, in comparison with younger people's. The same result was presented regarding the use of new technologies in general.

By comparing the younger senior citizens (age 55-65) with those of more advanced age (66 or older), Dias (2012) uses a quantitative and qualitative approach concerning the relationship between both interviewed groups with the Internet. The results showed that low education level (especially of older women) limits the use of computers, mobile phones and the Internet itself. On the other hand, many in the younger age group are still economically active and, consequently, are more prone to use computers and the global network.

A three-step study was performed by Thomas and Briggs (2014) in order to identify what the elderly expected in how a digital legacy is presented. The work started with the elabora-

tion of scenarios to try to cover the perspective of senior citizens' expectations regarding digital legacies. This stage was followed by work with an elderly focus group, using those scenarios and QR code for greater interactions in the discussion. Finally, there was a workshop among ages, in which the elderly could discuss with young people about digital natives and creation of digital content. In conclusion, the authors point out that, in the opinion of some elderly people, technology is a barrier among generations and not a means of facilitating knowledge exchange.

Still regarding digital legacies, Brubaker and Hayes (2011) study the difficulties involved in managing a person's digital legacy, since it refers to a part of who the person used to be. This becomes even more difficult when it is necessary to manage this legacy on social networks, as there is a connection between the account and the person who created it, so that the account acquires a personality that that person wished to represent. For Maciel and Pereira (2016), the investigation of the post-mortem digital legacy in the light of technical, cultural, legal and affective principles is urgent, and the proposal of designing solutions for information systems related to the digital assets left by the account owners who pass away. In this work and other research by the group (Maciel and Pereira, 2015), a series of possibilities for research and scientific and technological development in this field are addressed.

To facilitate the inheritance of digital materials, equivalent to the digital assets defined by Carroll and Romano (2010), which are photos, tweets, and other digitally produced files. Odom et al. (2012) developed three devices to facilitate the inheritance of these materials. These devices have been tested by eight families to analyze their design and usability. The researchers concluded that, for many families, the devices do not support family values in the same way as physical assets. This statement made the discussion about design solutions broader, seeking to improve and facilitate the confrontation of families with the possibility of having access to digital assets in an easier way in the future.

Regarding the inheritance of material assets, Sousa et al. (2015) conduct a research to explore the meanings of inheritance for the elderly. The research considers the fact that, during their lifetime, these people assume the position of heirs and donors. During the research, elderly respondents (people aged 80-95) are asked to explain what most marked them when they received an inheritance. Some of the questions were about their relationship with the person who bestowed the inheritance, whether the inheritance was something significant, and subsequently were asked to put themselves in a position to pass on their inheritance, and why did they choose these people to pass on their legacy. Both questions could be answered freely, or left unanswered. In addition, there was also a scale analysis of the feelings linked to this process of inheriting and giving, such as happiness, loneliness, love, impotence, among others. They concluded that the act of defining an inheritance is something that connects past, present and future.

Gray and Coulton (2013), in turn, explore how mourning will not disappear, but will be transformed until it becomes part of the supposed digital world. It has been modified to adapt to digital mourning, which often occurs on so-

cial networks. This type of mourning ends up bringing implications for those who create systems, which provide “end of life” support. The study highlights the importance of thinking about this aspect, since the grieving process includes not only a person’s death, but also a whole cultural process, to which the systems must be prepared to attend.

Regarding technologies, the elderly are generally interested in learning more about them, and being involved with them. Even though some studies indicate that the first step to become more familiar with technology is taken by relatives of senior citizens, the latter maintain interest in learning and getting involved.

As for mourning and legacy, the elderly see their assets as something they will leave behind to represent who they once were, but leaving a legacy stored in the digital realm is still challenging for them, since many still see material assets such as property and objects as more meaningful symbols of who they are than the assets that can be stored digitally.

3 Methodology

For the development of this study, a quantitative and qualitative research was conducted, using a survey as a data collection strategy, whose objective was to understand the perspective of elderly participants on topics such as technology, digital assets and the importance of these instruments for each of them.

This project was approved by the Research Ethics Committee of the Federal University of Mato Grosso, and the studies compose the project DAVI - Dados Além da Vida (After-Life Data) (DAVI, 2020). The sample selection resulted in two groups of elderly people (G1 and G2), selected locally by the researcher. After a search for groups of elderly people, the researcher found two elderly people who did not know each other, each participating in a different group, and both groups met regularly. Each participant signed a free and informed consent form, authorizing the use of data extracted from the survey. The questionnaire was handed to both groups preceded by a brief explanation of the concept of digital legacy and digital assets.

The three steps defined for the organization of the non-anonymous questionnaire are described below: 1) The questions were labeled with the letter “P”, followed by the identification number in numerical order and using the same criteria (letter and number). “I” was assigned to the participating individual, with the addition of the questionnaire delivery order. 2) The set of 32 questions was divided into four sections: personal data (name, age, gender, education level and profession); religion (if they observed the rites of that religion); computer and Internet knowledge (if computers and mobile phones were used); and applications that are found in these devices, memorials and assets (physical and digital), if they considered digital assets and material assets in the same level of importance. 3) The language and the graphic aspect were targets of special care in order to make the questionnaire as simple as possible for the participants, which includes font size and choice of words. Thus, popular terms in technology have been replaced by others, such as a smartphone, for which the preferred term mobile phone with touch screen was

chosen.

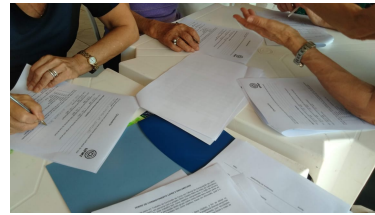


Figure 1. G1 filling out the questionnaire and engaging in discussion.

The criterion for choosing the location for conducting the questionnaire to G1 and G2, as well as the dates (August 10 and November 13, 2019, respectively), observed aspects such as convenience and appropriateness - places where participants would habitually meet, already equipped with tables and chairs. All participants were elderly and already knew each other. G1 includes participants from the Japanese-Brazilian community (**Figure 1**), and on the day of the meeting there would be a Buddhist ceremony after the application of the questionnaire, previously informed to the researcher. The G2 is an elderly group in a Catholic church. G1 is formed by 10 participants and G2 by 9 participants.

In the application phase of the research, after the goals were duly explained, participants were asked if they would like to participate. Some declined the invitation because they did not use that type of technology. They were given the questionnaire after a brief explanation about the concepts of memorials and digital assets, so that participants could understand the questions if they had been previously unaware about the subject matter. The researcher was available to read the questionnaire, if necessary, and to answer any possible questions. The process of answering the questionnaire lasted, on average, one hour for both groups. During this session, any comments made by participants about their life experiences were accordingly written down by the researcher. In due course, some of these comments will be transcribed here during the presentation of the results. It was also informed that participants were not required to answer any of the questions. For the analysis of objective answers, the software Live Gap (LiveGap, 2020) was used for generating graphs. In order to improve visualization and analysis of the subjective answers, all of them were typed into a document in the format Libre Office Writer, separated by question, by group (G1 or G2), and indicated with the number of the participant.

4 Results

This section presents the results obtained from surveys answered by participants of groups G1 and G2. Their responses were analyzed to compare if there was any significant difference in the way that the participants deal with technology, and the perspective of having digital legacy and digital assets.

It is important to note that, whenever errors were found in the questionnaire, the conflicting answers were not invalidated, as there were questions that should only be answered when “yes” was marked, and even then, some participants who marked “no” answered them. Q1 and Q2 were not ana-

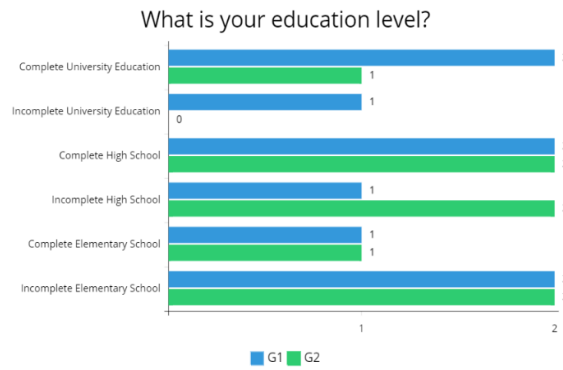


Figure 2. Education level of participants from G1 and G2

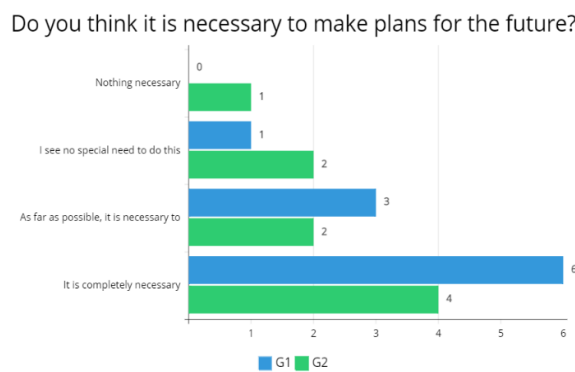


Figure 3. The importance of planning for the future of G1 and G2

lyzed because they served only for control purposes (“What is your name?” and “In what year were you born?”, respectively). In this article, italics will be used for the *ipsis literis* transcription of the excerpts or fragments of excerpts expressed by the research participants.

In the first session – General Information - Q3 asked about the participant’s gender: G1 included 7 women, 1 man, and 2 people who did not answer, and G2 included 8 women. It is not clear why the group is predominantly female, but one of the possibilities is that the chosen locations had ties to religion. According to the Pew Research Center (Pew, 2020), women represent most of the members of religious gatherings.

By examining graph in Figure 2, regarding education level, it is observed that two participants from G1 claimed to have completed a university degree, as opposed to one participant from G2. As for completing a high school education, both had two participants at that level. One participant from G2 mentioned that she wished to continue studying; however she got married at a young age and her husband kept her from studying. Other female participants agreed and added that their parents had also stopped them from getting a degree.

When asked if they thought it was necessary to plan for the future, Figure 3, G1, most of the participants answered: “It is completely necessary” (6 votes), followed by: “it is somewhat necessary” (3 votes), and then “it is not at all necessary” (1 vote). Unlike G2, which, even though the option “It is completely necessary” (4 votes) had the most votes, there was a tie between “it is somewhat necessary” and “there is no

particular need for this”, with two votes each and lastly: “It is not at all necessary”. In G2, two participants engaged in heated discussions involving divergence in opinions, one defending that future planning is “completely necessary” while the other saying “there is no particular need for this”.

As for the religious aspect, Figure 4, which regards to having a religion, there was some diversity in G1: Catholic (7), Buddhist (2), no religion or preferred not to manifest their religion (2); while everyone from G2 pointed out that they followed the Catholic religion, as was expected. In regard to religious practice, in G1 there are frequent and occasional observers: 3 replied that they always practiced the social rites of their religion, while 5 answered “sometimes”. Most of the participants in G2 claimed to always participate in their religious rites (7), and only one answered “Yes, sometimes”.

The session “Knowledge about Computer Science and the Internet” focused on the participant’s familiarity with the technology. Most of the answers to the initial question “Do you use a mobile phone?”, Figure 5 were “yes” in both groups: in G1 there were 9 votes and in G2, 7 votes. G1 had 1 blank vote, and G2 a negative answer. One of the participants in G2 stated that, despite having a mobile phone, she did not use it because she did not know how.

For the type of mobile phone, the majority in both groups were found to own a mobile phone with a touch screen (smart phone): seven participants in both groups. One G1 participant stated that his phone was an analog. The question about the type of mobile phone generated many doubts in both groups due to lack of knowledge of their cellphone model. The question then returned to the researcher, as they pre-

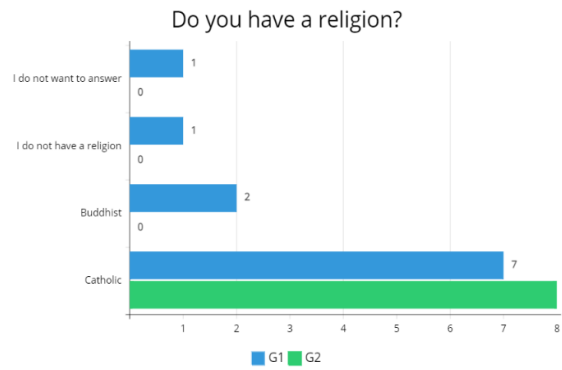


Figure 4. Investigation about religion of G1 and G2.

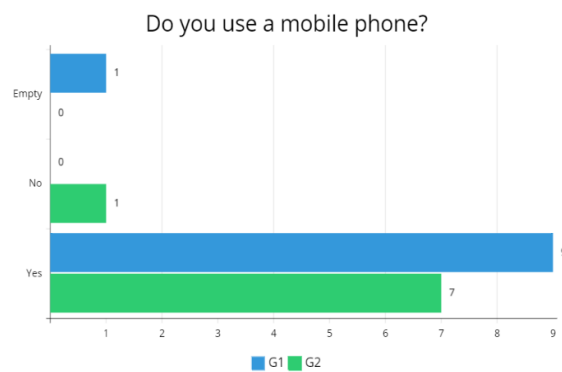


Figure 5. Use of mobile phones G1 and G2.

sented their own devices for her to identify the model. The answer to the question “Do you use computers?” reveals a big difference between the two groups. While 4 people from G1 use a computer, only one user was identified in G2. Among those who do not use a computer, the number of G1 (4 users) is smaller than that of G2 (7 users), and there were 2 unanswered questions in G1. The types of computers that the 4 G1 participants claimed they used were: notebooks (2), desktop computers (1), and both (1). A single G2 user uses a notebook.

In order to know about the participants’ experience with using functionalities, such as how to access websites, or independent functions of the Internet, such as text editors, three questions were asked: i) Q13 (“Do you use the Internet?”). In G1, the answer “yes” received 6 votes, while “no” and blank each received 2; in G2, “yes” was the preferred answer of 5 participants and “no” was answered by 3 participants. ii) Q14 (“Do you usually participate in social networks?”): in both groups, an identical number of participants opted for “yes”, and the same pattern followed for the answer “no” (respectively, 4 and 3). In addition, G1 had 3 blank responses and G2, only 1. iii) Q15 (“Do you usually use other features of the computer, or mobile phone and Internet (example: text editors, e-mail)?”), The groups showed remarkable difference “yes” was the preference of 5 participants and “no” to 3; ii) Q14 (“Do you usually use social networks?”), in both groups, an identical number of participants opted for “yes”, repeating the pattern for the answer “no” (respectively 4 and 3). In addition, G1 had 3 blank responses and G2, only 1. iii) Q15 (“Do

you usually use other features of the computer, or mobile phone and Internet (for example: text editors, e-mail)?”), the groups revealed remarkable differences between them. G1 had 5 “yes” and 3 “no” answers; and G2, 7 “no” answers and no affirmative answer. G1 had two blank responses, G2 had only one.

In Q16, “If you answered YES to any of the previous questions, check below which of the programs you use and your level of confidence when using them”. Several programs were placed that can be accessed on computers and / or mobile phones, among them: WhatsApp, Facebook, e-mail, Instagram, Word, Pinterest, among others, with the question. The preference proved to be the same in both groups, namely: WhatsApp, E-mail and Facebook, respectively, however, in G1, there was a tie between Facebook and Word, both with two votes. The next question was if anyone helped the participants to use social networks, in G1 there were 6 “yes” and 4 “no” answers, and G2, 3 “yes” and 3 “no”, with 2 blank answers.

For those who answered “yes”, the question “Who?” followed. Most of both groups answered: grandchildren, followed by children. In G1 there was a tie in the preference for children and friends. One person from G1 answered the spouse, an option that was not checked by anyone in G2. There are two assumptions for the non-incidence of spouses: perhaps these women do not think their partners are able to help them, since they are presumed to be of the same age, or perhaps they are separated or widowed.

Regarding the discursive question Q19, “What will hap-

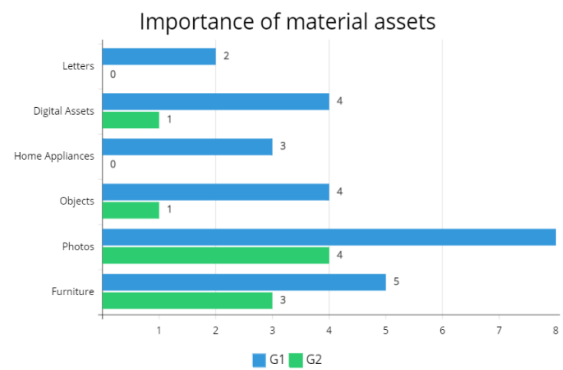


Figure 6. Which assets are more important - G1 and G2

Figure 7. Would you let someone manage your digital assets - G1 and G2.

pen to your files when you stop using the social network?”, the following answers were obtained: of the G1 participants, 5 did not answer, 2 answered “nothing” and 3 expressed, respectively, I2, I5 and I9: “it will be stored in the device”; “I think it will be discarded” and “Forgotten or discarded”; of the participants in G2, 4 were the blank answers, while I2, I3 and I4 think they will “disappear”. I8 stated: “I think that if the mobile phone still functions, the file will remain.”

Some participants from both groups expressed dissatisfaction with the devices they use, as at some point the device reaches its maximum storage, and they are forced to delete the files they had saved; however, this seems unreasonable, since there is no way to have unlimited storage on the device. In this case, it is speculated that the group did not know about the use of cloud storage, in which it would be possible to store files that occupy the device, such as photos and videos, without having to permanently delete them. The probable lack of information on the subject, such as the availability of multiple tools, ends up harming this age group. Problems that can occur with the applications themselves were also mentioned.

Questions Q20 to Q22 addressed the topic of memorials and assets (both material and digital). Question Q20 asked: “Do you think it is important to keep the family’s memory over the years?”, In G1, 7 people answered “yes”, 1 “no” and two left the answer blank; in G2, if one was not unanswered, there would be a unanimous agreement, for 8 answered “yes”. In Q21, “Do you care about maintaining your family’s memories?”, G1 had 7 “yes” answers and 3 blank answers. Meanwhile, G2 was practically unanimous, with 8 “yes” answers, and one blank. Q22, “Do you keep your memories organized?”, G1 had 7 “yes” answers, one “no” and two blank ones. G2 already had 7 “yes” answers, and a blank response. Additionally, participants were asked to expand on the topic to talk about memories and keeping them.

The family theme was recurrent in both groups. In G1, 6 participants responded with phrases such as: “I am happy to reminisce about my family”, written by I3 and “For my grandchildren to remember their descendants [probably meaning “ascendants”]”. I2, I7 also reported having saved “Super 8” videos that recorded family trips. He inquired whether it could be considered a Digital Asset, since it was

saved in a way that can only be accessed by a machine. I9 reported having arranged photo files and documents for each child. In G2, there were three responses. I5 wrote: “Remembering good things from the past”, I6 wrote about the family, as did the G1 participants: “Talking about the family to the family”, while I8 said he preferred to use it to “reminisce” by leafing through tangible photo albums, as opposed to photos stored in a mobile phone.

One thing that was made clear in both groups is the importance of keeping things for the family. However, participants also cherish the importance of memories for themselves. This matter was reported by one of the members of G1, who wrote: “Children and grandchildren would not care much about the photos of her with her friends.” This testimony highlights the fact that, for the participants, some of the assets that are dear to them are important only for themselves.

Graph in Figure 6 represent the responses to Q23, which requests the survey takers to list the following items according to their importance: furniture, motorcycle, objects (cups, cutlery, teapots, etc.), appliances, digital assets and letters. In descending order of importance, “Photos”, followed by “Furniture”, were selected the most, in both groups. Only two people chose “Letters” from the list of importance in G1 (Figure 6), but not the most important, and only three chose appliances, but also, not as the most important. In G2, nobody considered letters or appliances as important, as can be seen in Figure 6.

Q24 wished to know if the participants had already been concerned with the transfer of digital assets during their lifetime, obtaining from it, in respective order, the following responses from G1 and G2: 8 answered “yes” and 2 “no”; and 3 answered “yes” and 5 “no”.

The question Q25 (“Do you think that a digital asset has the same value as a material asset?”), G1 had the majority “no”, with 5 answers, 3 “yes”, and 2 blank answers. G2 responses were similar, with 5 “no”, 1 “yes” and 1 blank. In Q26, “yes” prevailed in both G1 and G2 (6 and 5, respectively) regarding the importance of maintaining digital information. At Q27, the participants were asked whether they would let someone manage their assets after their death, Figure 7. It was demonstrated that the amount of “yes” answers

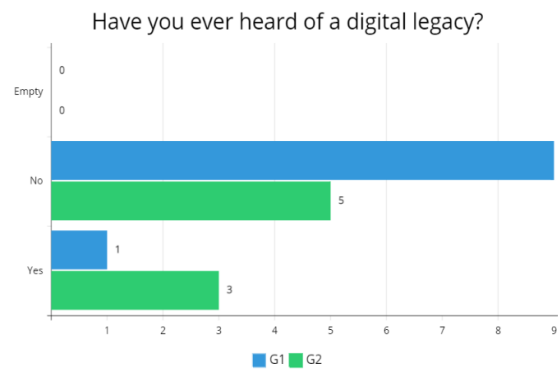


Figure 8. Have you ever heard of a digital legacy - G1 and G2.

(3) was the same in both groups; and that “no” was selected by 4 people in G1 and 2 in G2. “I have no digital assets” was the response of 2 people and 1 participant did not respond. This happened in both groups. Question Q28 “If yes, who?” was improperly answered by many, despite the orientation to only write a response if the answer to the previous question had been “yes”. “My children” was the response of most people in both groups: 4 in G1 and 3 in G2. “My grandchildren” received 2 votes in G1.

In response to Q29: “Have you ever heard of the term Digital Legacy?”, Figure 8, one G1 participant marked “yes”, while 9 marked “no”; whereas G2 had 3 “yes” answers and 5 “no”.

Then, Q30 asked them to write down what they thought about the explanation regarding Digital Legacies. G1 had 7 answers to the subjective question. I1, I4 and I9 said, respectively: “great”, “I thought it was important”, and “Interesting and important to pass on to the children and grandchildren”; the other participants (I3, I5 and I6) answered, respectively, “nothing”, while I10 answered “no”, while G2 contributed with 3 answers to this question. G2’s responses were from I5, I6 and I7, who found it, respectively, “Interesting, I had never heard of it”, “Great, there should be more people to come and explain”, “I thought it was great”. The lack of responses detected should not be attributed to the lack of interest in the topic, but to the way in which they should talk about this interest. Returning to previous comments regarding current legacy planning, a certain interest in the theme is shown, since many people separate the photos and videos they produce.

Q31 asked if the participants were interested in continuing to participate in research about the topic, and 3 answered “yes” while 7 answered “no” in G1, and there was unanimous 8 “yes” answers in G2. It is believed that one of the reasons for the results of the G2 is the frequency of group gatherings, for the religion-based group met weekly, whereas G1 did not have a specific frequency. It was not possible to know if there is a factor related to the group’s beliefs. In the last question (Q32), participants were encouraged to add their considerations on the topic. None of the G1 participants shared their opinion. Three G2 participants reported: “I want to learn”, “I want to learn to use my mobile phone”, and “I loved it, please continue” - I5, I6 and I7 respectively.

5 Discussions

The data gathered from the first section of the questionnaire showed that, in both groups, the majority of participants were women, many of them worked at home as seamstresses, hairdressers, some in commerce, and are all currently retired. However, the majority claimed to be a “housewife”. The professional choice may be due to education level of each one, or to factors beyond their control, for example, acquiescence to a main source of income who exercises decision-making power over them to remain in that educational phase.

The session on religion brought no surprises, for the survey was held in environments used for the participants’ religious practices. When Nilsson et al. (2003) interviewed elderly people regarding their future perspectives from a psychological point of view, they concluded that imagining the future is intrinsically associated with religion. Many of his interviewees who were Christians demonstrated their thoughts and values more easily. Which can confirm why, when talking to G2 about the future, the discussion about leaving their assets was comparatively more heated. However, in general, when faced with the prospect of the future, they planned the future in daily terms while avoiding confrontation with death.

As for the Buddhist religion, also addressed in this study, Hui and Coleman (2012) question: because Buddhism relates to the belief in reincarnation, does this reduce anxiety about death? This question was based on the statements made by Greenberg and Arndt (2011) in their work called Terror Management Theory, which delves into how people seek to manage the terror and conflicts intertwined in life, such as death, through values that seek to offer immortality. As a statistical study with elderly people, that is, only involving crossed data, the answer found by the authors was that there was no relationship between them; therefore, Buddhist believers were also shown to suffer anxiety related to death.

With regard to the section ‘Knowledge on Computing and the Internet’, four highlights are appropriate:

1. most participants use mobile phones more than computers, which went against the expectations of this group of researchers, as they belong to a generation that was acquainted with the computer first. This fact can be explained due to the wide berth of mobile devices, a resource that is more accessible and more compact than a computer;

2. many of the participants do not relate the use of applications such as WhatsApp and Facebook to the Internet, and this may be due to the fact that many of them see the word “Internet”, as something related to search engines, since many times the first page that appears when you open a browser is Google;
3. some of the participants were unaware that the lack of Internet was the reason for their messages not being delivered. In general, family members such as children and grandchildren who configure the Internet on the elderly’s device. Failure to participate in this process can generate ignorance about the situation mentioned;
4. as expected, WhatsApp is the most widely used application, mainly for organizing meetings, such as the one that was taking place, for sending photos, or for contacting loved ones and friends.

A research by Ferreira et al. (2018) investigated the influence of family and religious groups on the adoption of WhatsApp by senior citizens. The elderly people interviewed in this study claim that the use of the tool was a consequence of their family’s influence rather than that of their religious group, and an important factor was financial, since its use as a communication tool is the cheapest alternative.

A study by Mallenius et al. (2007) addressed that, although senior citizens show considerable interest in learning new technologies, such as the use of smartphones, several factors may prevent this age group from embracing them, which can include anxiety generated by learning something new and the fact that instruction manuals are often not sufficiently instructive for these readers. Other observed factors are fear of using the device incorrectly and damaging or unformatting it – as they are unsure how to go back to the previous settings and are granted little autonomy in the interaction – caused by lack of knowledge about the device and its functions (Pimentel et al., 2016).

The questions related to ‘Memorials and Assets (Material and Digital)’ revealed that the photos stored on mobile phones, the most frequently mentioned device from the list of options, seemed unimportant to the participants; thus they do not consider it a digital asset. One of the reasons for this behavior can be explained by Massimi and Baecker (2010) in their study about inheritances and digital assets. In the authors’ opinion, most people prefer to inherit material assets because they hold more emotional value than digital assets. Another plausible justification, according to Gray and Coulton (2013), is lack of awareness for those who never thought about the importance of their assets, which was the case in which they were confronted within this research, when classifying the assets by degree of importance. This situation led the participants to reflect upon what makes those assets more important to them. As an example, it is mentioned that only two people, out of both groups, chose letters as something important.

Also regarding physical assets, the answers obtained in this research indicate that most of people interviewed think of their assets and memories as something to pass on to the family. This was also observed in the research by Sousa et al. (2015), in which, when confronted with the perspective of being donors, that is, writing their will, many of the interviewees

comment on having saved money for their children and even donating the inheritance of the spouse who has passed away to family members, since they would not keep that property.

There were also differences in the answers about owning digital assets, and to whom they would leave these assets, since, once again, some participants said they would not leave their digital assets to anyone. Others, who had claimed not to own digital assets, however, selected beneficiaries who would inherit their assets, thus contradicting the previous question.

In the end, few participants had ever heard of digital legacies and digital assets so, as far as they were concerned, whoever kept their digital devices (notebooks and mobile phones) would keep the data stored in them. They also mentioned the prospect that no one in the family would like to keep the devices, as they would be second hand, or even obsolete. Nevertheless, considering the previous questions, the study observed participants’ interest in keeping these assets, which the participants already store and keep in their own way so that family members can be given access. However, it is assumed that, when writing about the topic, participants displayed a certain level of fear, since some participants requested the “right answer.”

6 Final Considerations

This study aimed to investigate aspects of legacy and digital assets from the perspective of senior citizens. With the survey results, it was possible to analyze the elderly perspective. Through the questionnaire responses of both groups and the participants’ comments during the session, it was possible to observe a lack of knowledge about the existence of digital assets and how they are perceived. While they think about leaving their memories and inheritances, digital assets are not considered by them. Those with more knowledge about technology organize the nato-digital documents to leave it to their children. But, because they do not know that they are digital assets, they end up considering them only as photos or documents that can be printed and delivered.

One of the biggest obstacles to the appreciation of digital assets by people of this generation is their lack of knowledge concerning the tools they are using. This was evident from the beginning, when the questionnaire was presented and the topic was addressed, and many only then began to associate the assets stored on mobile phones, computers and, even external drives with digital assets, and believed that the digital environment would lead to inevitable losses. Such losses could be avoided with a little more knowledge and a wide dissemination on the topic.

An interesting factor about digital assets is that applications such as photos are currently shared by many people on different devices. Thus, determining who will be the detainer of that digital asset or who will be responsible for its conservation is not a trivial task. Compared to erstwhile photographs in print, which were kept by a few family members, the photographs in digital format allow other types of storage and sharing and can be perpetuated in different ways. However, there is a complexity in this treatment, since the greater

the number of photos generated, the greater the possibility of losing them due to the non-delegation of responsibility to certain people and/or non-sharing, for example. The use of photo albums, for example, is still closely associated with social networks, which also have restrictions on the transfer of digital assets, which, in turn, are still conditioned to each company's policies.

Many participants complained about the size of the questionnaire and the use of subjective questions. The statements collected from the participants suggest that they felt much more comfortable talking about the subject than writing about it. Furthermore, the general low education level of participants was a deterring factor. Future studies will consider the use of recorded interviews for research with this and other groups, thus favoring greater accessibility and engagement of the participants.

The aim of this exploratory study is to elaborate hypotheses and expand the research to enrich the understanding of the perception about senior citizens in relation to the legacy and digital assets. One possibility is to broaden the research by including discussions about digital memorials Maciel et al. (2019) and Lopes et al. (2014), in order to gain deeper understanding of senior citizens' opinion on this possibility and the issues related to planning for death (Ueda et al., 2019). As a result of this age group's increased longevity, and tied to the mentioned purpose, we also intend to develop initiatives that will protect them from cybercrime and facilitate access to several public services.

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